

5. A leptin receptor (OB-R) polypeptide which is selected from the group consisting of OB-Ra (SEQ ID NO:2), OB-Rb (SEQ ID NO:4), OB-Rc (SEQ ID NO:6), OB-Rd (SEQ ID NO:8), and OB-Re (SEQ ID NO:10), or allelic variants thereof.
6. A leptin receptor (OB-R) polypeptide which is selected from the group consisting of:
- a) N-terminal corresponding to OB-Ra through Lys⁸⁸⁹ and C-terminal to a C-terminal selected from the group consisting of OB-Rb after Lys⁸⁸⁹ (SEQ ID NO:57), OB-Rc after Lys⁸⁸⁹ (SEQ ID NO:58), and OB-Rd after Lys⁸⁸⁹ (SEQ ID NO:59);
 - b) N-terminal corresponding to OB-Rb or OB-Rc through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra after Lys⁸⁸⁹ (SEQ ID NO:60,61) or OB-Rd after Lys⁸⁸⁹ (SEQ ID NO:62,63);
 - c) N-terminal corresponding to OB-Rd through Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra after Lys⁸⁸⁹ (SEQ ID NO:64), OB-Rb after Lys⁸⁸⁹ (SEQ ID NO:65), or OB-Rc after Lys⁸⁸⁹ (SEQ ID NO:66);
 - d) N-terminal corresponding to SEQ ID NO:55 from Pro⁶⁶⁴ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra after Lys⁸⁸⁹ (SEQ ID NO:67), OB-Rb after Lys⁸⁸⁹ (SEQ ID NO:68), OB-Rc after Lys⁸⁸⁹ (SEQ ID NO:69), or OB-Rd after Lys⁸⁸⁹ (SEQ ID NO:70);
 - e) N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to Lys⁸⁸⁹, and C-terminal corresponding to OB-Ra after Lys⁸⁸⁹ (SEQ ID NO:71), OB-Rb after Lys⁸⁸⁹ (SEQ ID NO:72), OB-Rc after Lys⁸⁸⁹ (SEQ ID NO:73), or OB-Rd after Lys⁸⁸⁹ (SEQ ID NO:74);
 - f) N-terminal selected from the group consisting of OB-Ra, OB-Rb, OB-Rd, and OB-R from Pro⁶⁶⁴ to His⁷⁹⁶, and OB-Re from His⁷⁹⁶ (SEQ ID NO:75, 76, 77, and 78);
 - g) N-terminal corresponding to SEQ ID NO:55 from Met⁷³³ to His⁷⁹⁶, and OB-Re from His⁷⁹⁶ (SEQ ID NO:79); and
 - h) allelic variants of any of subparts a) through g).

7. A leptin receptor (OB-R) polypeptide wherein

- C1
- a) the N-terminal sequence is selected from the group consisting of
 - i. amino acid residues 1-889 (SEQ ID NO:80);
 - ii. amino acid residues 23-889 (SEQ ID NO:81);
 - iii. amino acid residues 28-889 (SEQ ID NO:82);
 - iv. amino acid residues 133-889 (SEQ ID NO:83);
 - v. amino acid residues 733-889 (SEQ ID NO:84);
 - vi. amino acid residues 1-796 (SEQ ID NO:85);
 - vii. amino acid residues 23-796 (SEQ ID NO:86);
 - viii. amino acid residues 28-796 (SEQ ID NO:87);
 - ix. amino acid residues 133-796 (SEQ ID NO:88);
 - x. amino acid residues 733-796 (SEQ ID NO:89); and
 - xi) allelic variants of any of subparts i) through x); and
 - b) the C-terminal sequence is selected from the group consisting of
 - i) SEQ ID NO:11;
 - ii) SEQ ID NO:12;
 - iii) SEQ ID NO:13;
 - iv) SEQ ID NO:14;
 - v) SEQ ID NO:15 after His⁷⁹⁶ (SEQ ID NO:90); and
 - vi) allelic variants of any of subparts i) through v);

wherein the numbering in subpart a) is based on the amino acid sequence of SEQ ID NO:55

9. The soluble leptin receptor of Claim 8 which is selected from the group consisting of

- C2
- a) OB-Re (SEQ ID NO:10);
 - b) an N-terminal sequence which is selected from the group consisting of:
 - i) OB-Ra (SEQ ID NO:2),
 - ii) OB-Rb (SEQ ID NO:4),
 - iii) OB-Rd (SEQ ID NO:8), and

iv) corresponding to SEQ ID NO:55 from Pro⁶⁶⁴, through His⁷⁹⁶, and a C-terminal sequence which is OB-Re from His⁷⁹⁶ (SEQ ID NO:91); and

v) allelic variants of any of subparts i) through iv);

c) an N-terminal sequence which is selected from the group consisting of

i) amino acid residues 1-796 (SEQ ID NO:85);

ii) amino acid residues 23-796 (SEQ ID NO:86);

iii) amino acid residues 28-796 (SEQ ID NO:87);

iv) amino acid residues 133-796 (SEQ ID NO:88);

v) amino acid residues 733-796 (SEQ ID NO:89); and

vi) allelic variants of any of subparts i) through v); and

a C-terminal sequence which is SEQ ID NO:15;

wherein the numbering in subparts b) and c) is based on the amino acid sequence of SEQ ID NO:55.
